

State of New Jersey

Department of Environmental Protection

Air Quality Permitting

General Permit

Site Remediation Activities for Gasoline Contamination at Vehicle Fueling Stations

This General Permit allows for the construction, installation, reconstruction, modification and operation of one or more of the following types of remediation systems at the specified location:

1. Soil Vapor Extraction without Air Sparging;
2. Air Sparging with simultaneous Soil Vapor Extraction;
3. Groundwater Air Stripping.

This General Permit will allow the remediation of subsurface gasoline contamination at:

- vehicle fueling stations, including current or former retail gasoline stations,
- vehicle fueling activities located at municipal, county and state garages, fire and police departments, and
- similar vehicle fueling activities located at commercial and industrial sites.
- An adjacent property, provided the remediation activities are related to and conducted concurrent with remediation activities at an approved site.

The control apparatus that may be used under this General Permit to reduce air emissions of offgases during site remediation activities are limited to a:

- Thermal Oxidizer,
- Catalytic Oxidizer, or
- Carbon adsorption system consisting of a minimum of two carbon beds connected in series.

This General Permit allows the replacement of one type of remediation system and/or control apparatus with another system throughout the duration of the project as long as the equipment complies with the applicable requirements of this General Permit. This General Permit can also be used to conduct a pilot test at vehicle fueling station sites in accordance with N.J.A.C. 7:27-8.9 provided an approved control apparatus is used.

I. DEFINITIONS

The terms used in this General Permit shall have the meanings given to them in N.J.A.C. 7:27-8 and/or N.J.A.C. 7:27-22, except as listed below:

- **Air Sparging** means a site remediation system where air or oxygen is injected into the soil or groundwater to enhance mass transfer of the contaminants from the soil or groundwater into the injected air or oxygen.
- **Off-gas Control Apparatus** means a pollution control device used to reduce emissions of VOCs before discharge to the atmosphere by treatment of the off-gases produced as a result of site remediation activity.
- **Soil Vapor Extraction** means a site remediation activity where soil gases (and contaminants) are removed from the unsaturated soil zone using a vacuum system.
- **Groundwater Air Stripping** means a site remediation activity, where VOC contaminated groundwater is pumped to an aboveground vessel where the VOC contaminants are removed by contact with an air stream and the off-gases discharged to the atmosphere.
- **Vehicle Fueling Station** means current or former retail gasoline stations, vehicle fueling operations at municipal, county and state garages, fire and police departments, and similar vehicle fueling activities located at commercial and industrial sites. The site remediation activities covered under this General Permit are solely for contamination due to gasoline discharges. It does not include site remediation activities being conducted at bulk fuel terminals, petroleum refineries, or chemical manufacturing sites (SIC codes 5171, 2911, or 2800 - 2899, or equivalent industry classification codes).

II. AUTHORITY

This General Permit is issued under the authority N.J.S.A 26:2C-9.2. This General Permit shall allow for inspection and evaluation to assure conformance with all provisions of N.J.A.C. 7:27 et seq. An opportunity for public comment on this General Permit was provided on April 1, 2002.

III. APPLICABILITY:

This General Permit allows for the construction, installation, reconstruction, modification and operation of one or more of the following types of remediation systems at the specified location:

1. Soil Vapor Extraction Equipment operating without Air Sparging Equipment;
2. Soil Vapor Extraction Equipment operating simultaneously with Air Sparging Equipment;
3. Groundwater Air Stripping.

This General Permit will allow the remediation of subsurface gasoline contamination at vehicle fueling stations, including current or former retail gasoline stations, vehicle fueling activities located at municipal, county and state garages, fire and police departments, and similar vehicle fueling activities located at commercial and industrial sites.

Remediation activities conducted at an adjacent property may be included under this General Permit as long as the activities are related to, and are conducted concurrent with, remediation activities at a vehicle fueling station covered by this General Permit and utilize an approved off-gas control apparatus.

The site remediation activities covered under this General Permit are solely for contamination due to gasoline discharges. It does not include site remediation activities being conducted at bulk fuel terminals, petroleum refineries, or chemical manufacturing sites.

This General Permit can also be used to conduct a pilot test at vehicle fueling station sites in accordance with N.J.A.C. 7:27-8.9 as long as an approved off-gas control apparatus is used.

The off-gas control apparatus that may be used under this General Permit to reduce air emissions of off-gases during site remediation activities are limited to a thermal oxidizer, catalytic oxidizer, or carbon adsorption system consisting of a minimum of two carbon beds connected in series.

This General Permit allows the replacement of one type of remediation system and/or control apparatus with another system throughout the duration of the project as long as each complies with the applicable requirements of this General Permit. This provision permits the Permit Applicant to use the remediation systems and/or control devices that are the most suitable for the kind and amounts of air contaminants being emitted during the cleanup activity.

IV. EXCLUSIONS

This General Permit cannot be used for:

1. Site remediation activities at sites other than Vehicle Fueling Stations, as defined above.

2. Site remediation activities at a bulk terminal, petroleum refinery, or chemical manufacturing site (SIC codes 5171, 2911, or 2800 - 2899, or equivalent).
3. Site remediation activities at a major facility which has an approved Subchapter 22 Operating Permit.
4. Site remediation activities for contaminants other than those resulting from a gasoline discharge. For example, cleanups involving chlorinated organic compounds, such as 1,1,1, trichloroethane (TCA), trichloroethylene (TCE), perchloroethylene, and other chlorinated degreasing solvents would not be covered by this General Permit.
5. Site remediation activities that do not utilize an off-gas control apparatus,
6. Site remediation activities (including pilot tests) that use an off-gas control apparatus other than a thermal oxidizer, catalytic oxidizer, or carbon adsorption system (a minimum of two beds in series).
7. Site Remediation activities involving Air Sparging Equipment without the simultaneous operation of Soil Vapor Extraction Equipment consistent with the attached compliance plan.

V. COMPLIANCE PLAN:

Each piece of site remediation equipment, and associated control device, covered by this General Permit is subject to the following applicable requirements.

(Note: This General Permit does not include requirements of the Bureau of Underground Storage Tanks (BUST) or any other site remediation requirements. The Permittee should contact the BUST [609 292-8761] for information regarding other NJDEP requirements)

COMPLIANCE PLAN: Site Remediation Activities at Vehicle Fueling Stations

No.	Applicable Requirement (State & Federal Requirement unless otherwise indicated)	Monitoring Requirement	Recordkeeping Requirement	Submittal / Action
1.	The owner/operator (Permittee) shall notify the appropriate Air Regional Field Office (RFO) in writing at least seven days prior to starting remediation activities. The Permittee shall notify the RFO within thirty days of completion of the project. [N.J.A.C. 7:27-8.13(a)]	None	The Permittee shall maintain copies of notifications available for NJDEP inspection upon request for five years. [N.J.A.C 7:27-8.13(d)3]	The Permittee shall notify the Air Regional Field Office in writing at least seven days prior to starting remediation and within thirty days of completion of the project. [N.J.A.C 7:27-8.13(d)4]
2.	The owner/operator shall post the name of the contact person and responsible person, together with address and phone number, on a permanent, legible sign in a conspicuous location on the work site, prior to beginning the work (not including pilot tests) to be performed in accordance with the permit. [N.J.A.C. 7:27-8.13(a)]	None	None	The Permittee shall report any non-compliance within three working days after the event in writing to the Air Regional Enforcement Office. [N.J.A.C 7:27-8.13(d)4]
3.	Opacity: No visible emissions, exclusive of condensed water vapor. [N.J.A.C 7:27-8.13(a)]	None	None	The Permittee shall report any non-compliance within three working days after the event in writing to the Air Regional Enforcement Office. [N.J.A.C 7:27-8.13(d)4]
4.	This equipment shall not cause any air contaminant, including an air contaminant detectable by the sense of smell, to be present in the outdoor atmosphere in such quantity and duration which is, or tends to be, injurious to human health or welfare, animal or plant life or property, or would unreasonably interfere with the enjoyment of life or property, except in areas over which the owner or operator has exclusive use or occupancy.	None	The Permittee shall record in either a permanent bound log book or in readily accessible computer memory, instances (date and time) when the operation of equipment has the potential to cause off-property effects. All records must be available for NJDEP inspection upon request for the duration of the site remediation project, plus 5 years.	Any operation of the equipment which may cause a release of air contaminants in a quantity or concentration which poses a potential threat to public health, welfare, or the environment or which might reasonably result in citizen complaints shall be reported by the Permittee as required by the Air Pollution Control Act. The Permittee shall immediately notify the Department

No.	Applicable Requirement (State & Federal Requirement unless otherwise indicated)	Monitoring Requirement	Recordkeeping Requirement	Submittal / Action
	[N.J.A.C 7:27-5]		(<i>Note:</i> This General Permit does not include requirements of the Bureau of Underground Storage Tanks (BUST) or other site remediation requirements. The Permittee should contact BUST at (609) 292-8761 for information regarding their requirements.) [N.J.A.C 7:27-8.13(d)3]	of any non-compliance by calling the Environmental Action Hotline at 1-877-927-6337 [N.J.S.A 26:2C-19(e)]
5.	Stack Height above ground greater than or equal to 20 ft. [N.J.A.C. 7:27-8.13(d) 2ii]	None	None	None
6.	All components connected or attached to, or serving the equipment or control apparatus must be functioning properly and must be used in accordance with all conditions and provisions of this permit. [N.J.A.C. 7:27-8.3(e)]	None	None	None
7.	The Permittee will be allowed to switch the control apparatus throughout the duration of the project as long as they meet the requirements of this General Permit. [N.J.A.C. 7:27-8.13(a)]	None	The Permittee shall maintain records of all equipment and control apparatus used and make these available for NJDEP inspection upon request. The Permittee shall record the date and time when the equipment or control apparatus is changed. Records shall be kept for the duration of the site remediation project, plus 5 years. [N.J.A.C. 7:27-8.13(d)3]	None
8.	<u>For Sources Using Air Sparging</u> The ratio of the Soil Vapor Extraction rate to the Air Sparging rate shall be at least three to one	The Permittee shall monitor the ratio of the SVE rate to the AS rate, by	The Permittee shall record the Soil Vapor Extraction and Air Sparging	The Permittee shall report any non-compliance within three working days

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	(3:1) at all times during operation. [N.J.A.C. 7:27-8.13(a)]	using the flow rates as measured in accordance with Facility Specific Requirements References Numbers 10 and 11 at the following frequency: once within the first seven operating days after implementation of air sparging and quarterly thereafter. [N.J.A.C. 7:27-8.13(d)2]	flow-rates at the time of the measurements. The SVE/AS ratio shall then be calculated and recorded in a permanent bound logbook or in readily accessible computer memory. The records shall be available for NJDEP inspection upon request for the duration of the site remediation project, plus 5 years. [N.J.A.C. 7:27-8.13(d)3]	after the event in writing to the Air Regional Enforcement Office. [N.J.A.C 7:27-8.13(d)4]
9.	The Permittee shall air sparge at a minimum depth of 10 feet below the ground surface. [N.J.A.C. 7:27-8.13(a)]	The Permittee shall monitor the depth of the air sparging wells upon request of the Department. This may be monitored with the use of well permits and well logs. [N.J.A.C. 7:27-8.13(d)2]	The Permittee shall maintain documentation of construction records for each air sparging well and make them available for NJDEP inspection for the duration of the site remediation project, plus 5 years. [N.J.A.C. 7:27-8.13(d)3]	None
10.	The maximum Soil Vapor Extraction rate shall be 500 Actual Cubic Feet per Minute (ACFM). [N.J.A.C. 7:27-8.13(a)]	The Permittee shall monitor the Soil Vapor Extraction rate using flow meters or equipment settings. The Permittee shall install, calibrate and maintain the monitors in accordance with the manufacturer's specifications. The monitoring frequency shall be as follows: once within the first seven operating days after implementation of air sparging and quarterly thereafter. [N.J.A.C. 7:27-8.13(d)2]	The Permittee shall record the Soil Vapor Extraction rate at the time of the measurements in a permanent bound logbook or in readily accessible computer memory. The records shall be available for NJDEP inspection upon request for the duration of the site remediation project, plus 5 years. [N.J.A.C. 7:27-8.13(d)3]	The Permittee shall report any non-compliance within three working days after the event in writing to the Air Regional Enforcement Office. [N.J.A.C 7:27-8.13(d)4]
11.	The maximum Air Sparging rate shall be 166 Actual Cubic Feet per Minute (ACFM). [N.J.A.C. 7:27-8.13(a)]	The Permittee shall monitor the Air Sparging rate using flow meters or equipment settings. The Permittee shall install, calibrate and maintain the monitors in accordance with the	The Permittee shall record the Air Sparging rate at the time of the measurements in a permanent bound logbook or in readily accessible computer memory. The records shall	The Permittee shall report any non-compliance within three working days after the event in writing to the Air Regional Enforcement Office

No.	Applicable Requirement (State & Federal Requirement unless otherwise indicated)	Monitoring Requirement	Recordkeeping Requirement	Submittal / Action
		<p>manufacturer's specifications. The monitoring frequency shall be as follows: once within the first seven operating days after implementation of air sparging and quarterly thereafter.</p> <p>[N.J.A.C. 7:27-8.13(d)2]</p>	<p>be available for NJDEP inspection upon request for the duration of the site remediation project, plus 5 years.</p> <p>[N.J.A.C. 7:27-8.13(d)3]</p>	<p>[N.J.A.C 7:27-8.13(d)4]</p>
12.	<p><u>For sources using Thermal Oxidizers</u></p> <p>The Equipment shall operate at either a minimum temperature of:</p> <ul style="list-style-type: none"> ➤ 1500°F with a minimum residence time of 0.5 seconds, or ➤ 1400°F with a minimum residence time of 1.0 seconds. <p>The minimum operating temperature shall be attained prior to start-up of the source equipment, with an automatic shutoff system designed to inactivate the source equipment when an outlet temperature less than the minimum permitted value is detected at any time.</p> <p>[N.J.A.C. 7:27-8.13(a)]</p>	<p>A temperature sensor shall be installed and operated to measure continuously monitor the temperature at the outlet of the Thermal Oxidizer. This sensor shall be operated in accordance with the manufacturer's specifications and shall be located in such manner that allows easy access and visibility. The sensor shall be properly shielded from direct contact with and radiation by the flame. Flame must not be visible from the point of view of the thermocouple.</p> <p>[N.J.A.C. 7:27-8.13(d)2]</p>	<p>The Permittee shall record operating temperature measurements at the exit of the combustion chamber on a continuous basis by installing and operating a continuous temperature recorder.</p> <p>Records shall be kept for the duration of the site remediation project, plus 5 years.</p> <p>[N.J.A.C. 7:27-8.13(d)3]</p>	<p>The Permittee shall report any non-compliance within three working days after the event in writing to the Air Regional Enforcement Office.</p> <p>[N.J.A.C 7:27-8.13(d)4]</p>
13.	<p>The Thermal Oxidizers shall be designed to operate at a minimum destruction and removal efficiency of 99% VOCs.</p> <p>[N.J.A.C. 7:27-8.13(a)]</p>	None	<p>The Permittee shall retain on-site the manufacturer's specifications for the control apparatus and make these available for NJDEP inspection upon request. Records shall be kept for the duration of the site remediation project, plus 5 years.</p> <p>[N.J.A.C. 7:27-8.13(d)3]</p>	None

No.	Applicable Requirement (State & Federal Requirement unless otherwise indicated)	Monitoring Requirement	Recordkeeping Requirement	Submittal / Action
14.	The Permittee shall maintain the Thermal Oxidizer per the manufacturer's recommendations. [N.J.A.C. 7:27-8.13(a)]	None	The Permittee shall retain the manufacturer's specifications for the control apparatus and make these available for NJDEP inspection upon request. Records shall be kept for the duration of the site remediation project, plus 5 years. [N.J.A.C. 7:27-8.13(d)3]	None
15.	<u>For sources using Catalytic Oxidizers</u> The equipment shall attain the minimum operating temperature as set by the manufacturer or 500 °F, whichever is greater. The minimum operating temperature shall be attained prior to start-up of the source equipment, with an automatic shutoff system designed to inactivate the source equipment when the inlet temperature is less than the minimum operating temperature. [N.J.A.C. 7:27-8.13(a)]	A temperature sensor shall be installed and operated to continuously monitor temperature at the inlet of the Catalyst. This sensor shall be operated in accordance with the manufacturer's specifications. [N.J.A.C. 7:27-8.13(d)2]	The Permittee shall record operating temperature measurements prior to the catalyst in the combustion chamber on a continuous basis by installing and operating a continuous temperature recorder. Records shall be kept for a period of five years. [N.J.A.C. 7:27-8.13(d)3]	The Permittee shall report any non-compliance within three working days after the event in writing to the Air Regional Enforcement Office. [N.J.A.C. 7:27-8.13(d)4]
16.	The Catalytic Oxidizers shall be designed to operate at a minimum destruction and removal efficiency of 99% VOCs. [N.J.A.C. 7:27-8.13(a)]	None	The Permittee shall retain the manufacturer's specifications for the control apparatus and make these available for NJDEP inspection upon request. Records shall be kept for the life of the duration of the site remediation project apparatus, plus 5 years. [N.J.A.C. 7:27-8.13(d)3]	None
17.	The Permittee shall maintain the Catalytic Oxidizer	None	The Permittee shall retain the	None

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	<p>per the manufacturer's directions.</p> <p>[N.J.A.C. 7:27-8.13(a)]</p>		<p>manufacturer's specifications for the control apparatus and make these available for NJDEP inspection upon request. Records shall be kept for the duration of the site remediation project, plus 5 years.</p> <p>[N.J.A.C. 7:27-8.13(d)3]</p>	
18.	<p><u>For sources using Carbon Adsorption</u></p> <p>The adsorption unit shall consist of a minimum of at least two or more carbon canisters in series.</p> <p>When breakthrough is determined based on the weight of the primary canister(s) or the concentration of the vapor stream leaving the primary carbon canister(s), the following action must be taken.</p> <p>The primary carbon canister(s) (closest to the equipment off-gas) shall be replaced with the secondary unit and the secondary unit replaced with fresh or newly regenerated carbon canister.</p> <p>The estimated time for breakthrough shall be calculated based on the amount of carbon in the primary canister(s), the maximum VOC concentration of off-gases measured at the inlet to the carbon adsorption beds, and the specifications of the manufacturer.</p> <p>[N.J.A.C. 7:27-8.13(a)]</p>	<p>The Permittee shall monitor the carbon adsorption system at a frequency that is less than the estimated time for breakthrough or at least quarterly. Either one of the following methods shall be used for breakthrough monitoring.</p> <ol style="list-style-type: none"> 1. Monitor the weight of the primary carbon canister(s) using a weight scale. When the weight of the primary canister(s) is equal to 80% or greater of the weight at saturation as provided by the manufacturer, the primary canister(s) is replaced by the secondary canister and a fresh or newly regenerated carbon canister is installed as the secondary, or 2. Monitor the concentration of VOCs in the off-gases at the inlet to the carbon adsorption system, exiting the primary carbon canister(s) using a properly calibrated portable field instrument (OVA or PID) with a range of 0 to 1000 parts per million by volume (ppmv) with an accuracy of \pm 	<p>The Permittee must maintain records of the estimated breakthrough time, the dates of testing and measurements obtained and make these available for NJDEP inspection upon request until project completion, plus 5 years..</p> <p><u>For sources using a weight scale:</u></p> <p>Record the date, time and weight of the carbon canister(s) ,when the primary adsorption unit is changed and make these available for NJDEP inspection upon request until project completion, plus 5 years.</p> <p><u>For sources using a portable field instrument:</u></p> <p>Record the VOC concentration measured at the inlet and outlet of the primary carbon canister(s), and in the discharge stack using a calibrated portable field instrument and make these available for NJDEP inspection upon request until project</p>	<p>The Permittee shall report any non-compliance within three working days after the event in writing to the Air Regional Enforcement Office.</p> <p>[N.J.A.C 7:27-8.13(d)4]</p>

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		<p>10 % as detailed on pages 213 – 227 of the Department's <u>Field Sampling Procedures Manual</u> dated May 1992.</p> <p>The breakthrough point is reached when the concentration of the gases exiting the primary carbon canister(s) exceeds 10 % of the inlet concentration of carbon adsorption system or 10 ppmv, whichever is greater.</p> <p>[N.J.A.C. 7:27-8.13(d)1]</p>	<p>completion, plus 5 years.</p> <p>Record calibration results in accordance with manufacturer's procedures and make these available for NJDEP inspection upon request until project completion, plus 5 years.</p> <p>[N.J.A.C. 7:27-8.13(d)3]</p>	
19.	<p>The Carbon Adsorption system shall be designed to operate at a minimum destruction and removal efficiency of 99% VOCs.</p> <p>[N.J.A.C. 7:27-8.13(a)]</p>	None	<p>The Permittee shall retain the manufacturer's directions for the control apparatus and make these available for NJDEP inspection upon request. Records shall be kept for the duration of the site remediation project, plus 5 years.</p> <p>[N.J.A.C. 7:27-8.13(d)3]</p>	None
20.	<p>The Permittee shall maintain the Carbon Adsorption system per the manufacturer's recommendations.</p> <p>[N.J.A.C. 7:27-8.13(a)]</p>	None	<p>The Permittee shall retain the manufacturer's specifications for the control apparatus and make these available for NJDEP inspection upon request.</p> <p>Records shall be kept for the duration of the site remediation project, plus 5 years, in a permanent bound logbook.</p> <p>[N.J.A.C. 7:27-8.13(d)3]</p>	None